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ABSTRACT

A study investigated whether fourth graders recall different amounts of information for passages of different emotional orientation, whether there is a relationship between their emotional response to the passage and the amount of information recalled, and whether they recall different relationships when they read passages of different emotional contexts. Subjects, 75 fourth graders from urban, suburban, and rural Florida who read at grade level, read passages on the topics of families, pets, and classrooms. The passage for each topic was written in three different emotional orientations (positive, neutral, and negative). Transcripts of free recall and probe questions were scored for the percentage of correct responses. Results indicated that the emotional orientation of a passage has a stronger effect on the amount of information than on the kind of information recalled. (Seven tables of data are included; 24 references, the reading passages and the survey instrument are attached.) (RS)

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THE IMPACT OF THE EMOTIONAL ORIENTATION OF A PASSAGE ON THE READING COMPREHENSION OF FOURTH GRADERS

Janice C Wiggins

Abstract

An information processing model of reading comprehension accounts for influence over thought processes by the text (bottom-up variables) and the reader (top-down variables). Prior knowledge, a top-down variable, has been found to influence reading comprehension both in the quality and the quantity of what is remembered. In this study it was hypothesized that emotion, also a top-down variable, would affect reading comprehension in the same way as prior knowledge. To test this hypothesis the emotional orientation of passages was manipulated to determine the effect on the reader's comprehension.

First, a semantic differential was developed to measure fourth graders' feelings about passages. Then, 75 fourth graders read passages, freely recalled what they remembered, orally answered probe questions, and responded to the semantic differential. Each student read a total of three passages, each on a different topic (families, pets, and classrooms) and each with a different emotional context (positive, neutral, and negative). Transcripts of the free recall and probe question responses were scored for the percentage of

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correct responses. An analysis of variance using these two sets of scores yielded significant results. Linear regression using these two sets of scores and the scores from the semantic differential yielded significant results for two cases: (a) using probe question scores for negative passages only, and (b) using free recall scores for positive and negative passages together. Correlations conducted with comprehension scores and modified semantic differential scores were not significantly different from zero. Chi square tests to compare the recall of specific relationships were significant for four out of the ten relationships tested.

The findings of this study indicated that the emotional orientation of a passage has a stronger effect on the amount of information than on the kind of information recalled.

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THE IMPACT OF THE EMOTIONAL ORIENTATION OF A PASSAGE ON THE READING COMPREHENSION OF FOURTH GRADERS

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THE IMPACT OF THE EMOTIONAL ORIENTATION OF A PASSAGE ON THE READING COMPREHENSION OF FOURTH GRADERS

Purpose

The purpose of this project was to examine the relationship between the emotional orientation of a passage and its impact on readers' comprehension of that passage.

Research Questions

Question 1. Do fourth graders recall different amounts of information when they read passages having positive, neutral, or negative emotional contexts?

Question 2. Is there a relationship between fourth graders' responses to a semantic differential measuring feelings about passages having positive, neutral, or negative emotional contexts and the amount of information recalled from the passages?

Question 3. Do fourth graders recall different relationships when they read passages with positive, neutral, or negative emotional contexts?

Literature Review

Educators concerned with enhancing reading comprehension link the student to new knowledge through the student's past experiences. Presumably past experience and existing knowledge influence the processing of new information. One's experiences involve not only the cognitive content but also the emotional outcome of the experience; therefore, both cognition and emotion would appear to influence comprehension of new information.

Theorists have suggested that reading comprehension proceeds in two directions (Just and Carpenter, 1977; Gibson and Levin, 1975; Anderson, Spiro, and Montague, 1977). First, the text provides information from which the reader derives meaning. This involves a flow of information from the text to the reader. Second, the reader's prior knowledge, knowledge of the text, motivation for reading, and emotional state operate on the information acquired from the text. The predominant source of information here is the reader's cognitive structures which involve not only intellectual processes and structures but also emotional information and processes.

This bidirectional model of comprehension has been discussed by psychologists (Norman and Bobrow, 1975; Rumelhart, 1977b) as well as reading researchers (Smith, 1971; Goodman, 1979). The situation in which information processing is considered to be based primarily on the text is termed a bottom-up approach. Here, comprehension is controlled by the structure and content of the text. In reading instruction, phonics programs utilize a bottom-up approach, moving the reader from part to whole, from individual sounds and letters to complete reading passages. If the control of the comprehension is based on reader characteristics (i.e., prior knowledge, interest, motivation), then the processes associated with comprehension are said to occur from top down. Reading instruction which moves the reader from the whole to the part, emphasizing the reader's experiences, includes language experience programs and employs a top-down approach. Clearly, reading is not an either/or process in which bottom-up or top-down processing exerts total control over comprehension. Rather, comprehension is dependent on relative amounts of control exerted by each source.

This study focused on the top-down aspects of reading (e.g., prior knowledge and emotion). From a top-down perspective the reader's prior knowledge is a powerful variable. Prior knowledge aids in the comprehension of abstract text (Royer and Cable, 1975) and can also affect content retrieved by the reader (Mathews, 1982).

The significance of the effect of prior knowledge on comprehension is not a new idea. Ausubel (1968) emphasized the importance of prior knowledge when he proposed the use of advance organizers to link the learner's existing knowledge base with new material. Norman and Bobrow (1975; Bobrow and Norman, 1975) describe information processing in terms of the relationship between the subject's expectations (based on prior knowledge) and the incoming information.

In addition, the top-down process includes the affective domain, an area in which there has been much discussion but little research. Norman (1981) cites emotion as an issue to be considered by the discipline of cognitive science. He describes the study of emotions as a field with "important findings and implications for the study of cognition" (p. 282).

Bower (1981) investigated the role of emotion in memory. He proposed three ways emotion impacts cognition and memory. First, he found that people recalled a greater percentage of happy experienceswhen happy, and sad ones when sad. Second, cognitive processes such as free associations and social perceptions are strongly influenced by emotion. Finally, when the emotional tone of a story matched the emotion of the reader the memorability of the story events increased.

Cognitive theorists Lazarus (1984) and Zajonc (1984) view emotion as part of the cognitive process, yet they disagree on the primacy of affect versus the primacy of cognition in information processing. Lazarus contends that cognition must precede affect; one must understand a concept before affect can play a role in the process. However, Zajonc insists that affect is primary; how one feels about a subject directs subsequent information processing, such as comprehension. Although studies have identified reader variables in comprehension such as general ability, prior knowledge, interest and motivation, and metacognition, little or no attention has been given to the effect on comprehension of the reader's emotional orientation to a given topic or passage.

Methodology

Subjects. The sample selected for this study consisted of 75 fourth-grade students in public schools in Escambia County, Florida. Students were from each of three types of schools - rural, suburban, and urban. These schools agreed to participate in the study and were chosen because they represented each of the three types of schools in Escambia County.

Teachers were asked to list students who read "on grade level", as determined by teacher judgement. Then students were randomly selected from those lists.

Instruments. Instruments developed for the study included nine passages, nine sets of probe questions, and a semantic differential designed to measure students' feelings about the passages.

The passages were based on three topics (families, pets, and classrooms). (A copy of the passages is in Appendix A.) The choice of these topics was based on the results of a pilot study in which fourth graders were interviewed about topics which elicited different feelings. For each topic three versions (positive, neutral, and negative) were written. The passages were written to be as closely parallel as possible in structure and in context. An adaptation of Kintsch's (1974, 1979) template text base was used to analyze

the structure of the passages. The positive and negative versions were more directly parallel to each other than to the neutral version. The same was true of the probe questions, which were written to be as parallel as possible in format and in content.

The semantic differential was developed according to standard procedures. (A copy of the semantic differential is in Appendix B.) In a pilot study the researcher developed a list of adjectives appropriate to fourth graders' vocabulary. The adjectives were used for the semantic differential which was field-tested with fourth graders.

The semantic differential was scored in the following manner. The instrument contained a five-point scale; for example, the responses for item 1 were "very happy," "happy," "ok," "sad," and "very sad." Each response was assigned a point value ranging from 5 for the most positive response to 1 for the most negative response. The total number of points for the seven items was the student's score for the semantic differential. This score was used in the regression analyses described in a later section.

Data Collection Procedures. Data collection consisted of one-on-one sessions with each subject and the researcher. The student read a passage, freely recalled what he/she remembered, and then answered orally a set of probe questions. (These oral responses were tape-recorded to minimize the impact of writing skill.) Then the student responded to a semantic differential to rate his/her feelings about the passage. This procedure was repeated until the student had read a total of three passages, each with a different topic (families, pets, and classrooms) and each with a different emotional context (positive, neutral, and negative). At the end of each session the researcher asked the student three questions: (1) What story made you feel the happiest?, (2) What story made you feel the saddest?, and (3) Which story was your favorite?

Data Analysis Procedures. Data analysis was conducted on the amount of information as well as the kind of information recalled by subjects. All tests were conducted at the .05 level of significance. Three sets of data were examined in the study: (a) the percentage of propositions freely recalled by subjects after reading passages with positive,

neutral, or negative emotional contexts, (b) the percentage of correct responses to probe questions based on passages with positive, neutral, or negative emotional contexts, and (c) the number of subjects recalling elements of particular relationships within passages.

The first two sets of data, comprehension scores, were used to answer Research Questions 1 and 2. A one-way analysis of variance with repeated measures was conducted to compare students' comprehension scores on the positive, neutral, and negative passages. A regression model was used with students' comprehension scores and their semantic differential scores.

The third set of data was used to answer Research Question 3. Each relationship in the passages included several idea units (elements). The frequency of recall of the number of elements of a specific relationship was tabulated for the positive and negative versions. Then a chi square test was used to compare the number of subjects recalling elements of that relationship between the positive and negative versions. Table 1 shows an example of the data used in the chi square tests.

Table 1

Example of the Data Used in the Chi Square Tests

Families - Relationship 5: 4 elements

Positive:
1. Since the parents have plenty of money
2. they take trips
3. so the children can travel
4. when they have time.

Negative:
1. Since the parents have no money
2. they can't take trips
3. so the children have to stay home
4. all the time.

Number of elements recalled	Number of students recalling this number of elements	
	Positive	Negative
0	5	5
1	6	5
2	10	8
3	3	3
4	1	2

Results

Research Question 1. Do fourth graders recall different amounts of information when they read passages with positive, neutral, or negative emotional contexts?

A three-group, one-way analysis of variance with repeated measures was conducted for two sets of data: the percentage of propositions recalled by fourth graders and the percentage of correct responses to probe questions.

The findings for the analyses using the percentage of propositions recalled are presented in Tables 2 and 3. Table 2 shows the means, standard deviations, and the reliabilities. The values are presented for each of the three emotional contexts as well as for the overall group of scores. In absolute terms, students recalled more propositions from neutral and negative passages than from positive ones.

Table 2

Mean, Standard Deviation, and Reliability for Percentage of Propositions Recalled by Fourth Graders after Reading Passages with Positive, Neutral, and Negative Emotional Contexts

	Positive	Neutral	Negative	Overall
Mean	26.147	31.173	31.16	29.493
Standard deviation	10.614	11.631	12.07	11.647
KR-21	.837	.85	.861	.855
N	75	75	75	225

Table 3 is the summary table for the analysis of variance. The calculated value of $F(2, 148) = 8.484$, $p \leq .05$, indicated a significant difference among treatment groups.

Table 3

Summary Table for Analysis of Variance of Percentage of Propositions Recalled by Fourth Graders after Reading Passages with Positive, Neutral, and Negative Emotional Contexts

Source	SS	df	MS	F
Between	18,138.23	74	245.111	
Within	12,250.0	150	81.667	
treatment	1,260.016	2	630.008	8.484*
residual	10,989.98	148	74.257	
TOTAL	30,388.23	224		

*$p \leq .05$

The findings for the analyses using the percentage of correct responses to probe questions are presented in Tables 4 and 5. Table 4 shows the means, standard deviations, and the reliabilities. In absolute terms, students answered more probe questions from neutral passages than from positive and negative ones.

Table 4

Mean, Standard Deviation, and Reliability for Percentage of Correct Responses by Fourth Graders to Probe Questions for Positive, Neutral, and Negative Passages

	Positive	Neutral	Negative	Overall
Mean	37.773	47.2	36.6	40.524
Standard deviation	19.524	23.424	15.811	20.307
KR-21	.948	.964	.916	.951
N	75	75	75	225

Table 5 is the summary table for the analysis of variance. The calculated value of $F(2, 148) = 6.531$, $p \leq .05$, indicated a significant difference among treatment groups.

Table 5

Summary Table for Analysis of Variance of Percentage of Correct Responses by Fourth Graders to Probe Questions Based on Passages with Positive, Neutral, and Negative Emotional Contexts

Source	SS	df	MS	F
Between	29,921.47	74	404.344	
Within	62,454.66	150	416.364	
treatment	5,064.938	2	2,532.469	6.531*
residual	57,389.72	148	387.768	
TOTAL	92,376.13	224		

*$p \leq .05$

Research Question 2. Is there a relationship between fourth graders' responses to a semantic differential about passages having positive, neutral, or negative emotional contexts and the amount of information recalled from the passages?

Linear regression analyses were used with the comprehension scores and the semantic differential

measure of feelings about the passages. The comprehension scores included two sets of data: the percentage of propositions recalled and the percentage of correct responses to probe questions.

The results of the analyses using the percentage of propositions recalled are presented first. One analysis used the entire group of scores for positive, neutral, and negative passages. Three additional analyses used values from each of the three groups (positive, neutral, and negative) separately. The calculated F values for all of these analyses were not significant. That is, there appears to be no relationship between the students' recall of passages and their responses to a semantic differential measuring feelings about the passages.

Given the similarity of the responses to the semantic differential for the positive and neutral passages, the issue of whether or not a truly neutral passage can be written, and the possible tendency for children to respond positively when there is no strong affect, the results of the neutral passages were dropped for the following analysis. The free recall scores and semantic differential scores for the positive and negative groups were reanalyzed in a linear regression model. The calculated F value was

significant, $r = -.23$, $F(1, 148) = 8.24$, $p \leq .05$. When only positive and negative passages are considered, there appears to be a relationship between the students' recall of those passages and their responses to a semantic differential measuring feelings about the passages.

Given that the direction of response to the semantic differential did not show a strong effect, additional analyses were conducted. The purpose of these analyses was to determine if the absolute magnitude of response to the semantic differential, instead of the direction of response, was related to comprehension. The first group of analyses involved the magnitude of response from the neutral point of the semantic differential. The absolute difference between the neutral point of the semantic differential, a value of 3, and each student's response was calculated for each of the seven items on the instrument. The total of these seven values became the student's new semantic differential score. This score was used with the student's free recall score in a Pearson correlation formula. The correlations were conducted with five groups of scores: (a) the entire set of scores from all passages; (b) the scores from the positive passages;

(c) the scores from the neutral passages; (d) the scores from the negative passages; and (e) the scores from the positive and negative passages together. These correlations were not significantly different from zero. The results of these analyses suggest that there is no relationship between the magnitude of response to a semantic differential measuring feelings about the passages and the students' recall of those passages.

The second group of analyses involved the magnitude of response from the mean performance response to the semantic differential. (The mean performance response is the average score for each item as determined by averaging the actual responses to the semantic differential in the study.) The mean performance response was calculated for four groups of scores: (a) the entire group of scores from all passages; (b) the scores from the positive passages; (c) the scores from the neutral passages; and (d) the scores from the negative passages. Then, the absolute difference between the mean performance response and each student's response was calculated for each of the seven items on the instrument. The total of these seven values became the student's new semantic differential score. This procedure was conducted for

each of the four groups of scores described above. Pearson correlation coefficients were calculated on the scores from these four groups. The correlation coefficients were not significantly different from zero.

The same procedures were used with the semantic differential scores and the percentage of correct responses to probe questions. In the analysis which used the entire group of scores from the positive, neutral, and negative passages, the calculated F value was not significant. In the three additional analyses using values from each of the three groups (positive, neutral, and negative, separately), the results from the positive and neutral groups were not significant. The result from the negative group was significant, $r = -.295$, $F(1,73) = 6.946$, $p \leq .05$. That is, the less positive the feeling toward the passage, as measured by the semantic differential, the greater the number of probe questions answered correctly.

When the probe question scores and semantic differential scores for the positive and negative groups were reanalyzed in a linear regression model, the result was not significant.

The results of the additional analyses using probe question scores and modified semantic differential

scores were not significant. Based on the results of these analyses, there appears to be no relationship between student performance on probe questions and their feelings about the passages, as measured by the semantic differential.

Research Question 3. Do fourth graders recall different relationships when they read passages with positive, neutral, or negative emotional contexts?

The number of students recalling specific relationships in each set of passages was examined. Each relationship was divided into several elements or idea units. The number of students recalling the number of elements in each relationship was tallied, and a chi square test was conducted to compare the number of students recalling the relationship between the positive and negative passages. (An example of the data used in the chi square tests is shown in Table 1.)

The results of the chi square tests were significant for four relationships, which are shown in Table 6. However, the results of the other six relationships were not significant. The number of students recalling certain relationships in the positive and negative passages was different from that

Table 6

Relationships Yielding Significant Results in Chi Square Tests

Families: Relationship 5	
$\chi^2(3, N = 25) = 9.413, p \leq .05$	
Positive.	Since the parents have plenty of money, they take trips so the children can travel when they have time.
Negative.	Since the parents have no money, they can't take trips so the children have to stay home all the time.
Pets: Relationship 1	
$\chi^2(2, N = 25) = 7.057, p \leq .05$	
Positive.	Even when you are lonely they will cheer you up.
Negative.	Even when you want to play, you have to worry about pets.
Pets: Relationship 2	
$\chi^2(3, N = 25) = 8.49, p \leq .05$	
Positive.	If you need someone to talk to, then your pet will listen, because it loves you.
Negative.	If you have a mean pet, then your friends will not come to play with you, because they will get bitten.
Classrooms: Relationship 1	
$\chi^2(3, N = 25) = 11.165, p \leq .05$	
Positive.	In some classrooms the teacher is pleasant and smiles all the time.
Negative.	In some classrooms the teacher is mean and yells all the time.

which would occur by chance. That is, it appears that sometimes the emotional orientation of a passage may have a qualitative effect in that readers recall different ideas from passages with different emotional orientations.

Other Findings. At the end of each session with a student the researcher asked three questions: (a) Which story made you feel the happiest?, (b) Which story made you feel the saddest?, and (c) Which story was your favorite? Table 7 shows the percentage of students' responses to the questions. The name of the positive passage read was given by 61.3% of the students to the first question. The second question was answered by 85.3% of the students with the name of the negative passage they had read. The responses to the third question varied: 49.3% answered with the name of the positive passage read; 41.3% with the name of the neutral passage, and 9.3% with the name of the negative passage.

Summary of the Findings. Three research questions were investigated in this study. The first one focused on the amount of information recalled. When free recall was the comprehension measure, students recalled more, in absolute terms, from neutral and

Table 7

Percentage of Students' Responses to Questions Asked at the Conclusion of the Interview

"What story made you feel the happiest?"	
61.3%	answered with the positive passage read
26.6%	answered with the neutral passage read
12%	answered with the negative passage read
"What story made you feel the saddest?"	
2.6%	answered with the positive passage read
6.6%	answered with the neutral passage read
85.3%	answered with the negative passage read
5.3%	gave no answer
"Which story was your favorite?"	
49.3%	answered with the positive passage read
41.3%	answered with the neutral passage read
9.3%	answered with the negative passage read

negative passages than from positive ones. When probed recall was the comprehension measure, students correctly answered more probe questions, in absolute terms, for neutral passages than for positive and negative ones. The results of a three-group, one-way analysis of variance with repeated measures indicated that the differences between the means for free recall scores and for probe question scores were significant.

The second question was concerned with the relationship between reading comprehension scores and measures of feelings about the passages. The results of linear regression analyses suggest that there may be a relationship between students' free recall scores and their feelings about passages, as measured by the semantic differential, for positive and negative passages. Also, there appears to be a relationship between students' performance on probe questions and their feelings for negative passages only.

Correlations were conducted using reading comprehension scores and modified semantic differential scores to determine if absolute magnitude of response was related to comprehension. The results indicated that there was no relationship.

The results of chi square tests conducted with the number of students recalling different relationships were significant for only four relationships out of the ones representing connective propositions. Therefore, the emotional orientation of a passage appears to have a limited qualitative effect.

Finally, in response to questions asked by the researcher about the passages, in general, students indicated that the positive passages made them feel happy, and the negative ones made them feel sad.

Conclusions

Research Question 1. Do fourth graders recall different amounts of information when they read passages with positive, neutral, or negative emotional contexts? The results of the analysis of variance tests suggest that the emotional orientation of a passage affects the amount of information recalled from the passage; this is also one of the effects of prior knowledge on comprehension.

For free recall scores the means for the neutral and negative passages were almost the same, 31.17 and 31.16, respectively. The mean for the positive passages was 26.1. For probe question scores the means for the positive and negative passages were

almost the same, 37.7 and 36.6, respectively. The mean for the neutral passages was 47.2.

The fact that the means for free recall scores are different from those for probe question scores may be explained by examining the issues of neutral affect and comprehension measurement. The issue of neutral affect influences several aspects of this study which include the students' responses to the semantic differential and the problem of writing a neutral passage. Another issue to be considered is comprehension measurement.

It is necessary to understand that different skills are assessed with free recall than with probed recall. Mathews and Camperell (1981) have described free recall as a measure of comprehension and memory for information in text. The reader is given minimal or no cues and is asked to tell everything remembered from the text. This comprehension task requires the reader to search his/her memory for the desired information and then to decide if it is actually the appropriate information. This task demonstrates how the reader organizes and relates information acquired from the text and how much information is accessible with a minimal amount of cues. Organization of information in memory and the interrelationship among

concepts is considered to be a major component of comprehension (Kintsch and van Dijk, 1978).

Mathews and Camperell(1981) described probed recall as a task in which the reader is provided with a probe, usually a question, to help assess comprehension of a text. Probed recall is more narrow in scope and less demanding than free recall. Probed recall is used to test for the presence of specific information and is less sensitive than free recall to the subject's organization of text.

For free recall scores the absolute value of the means for the neutral and negative passages were the same, and the absolute value of the mean for the positive passages was less. From this information it appears that readers recall more when they read neutral and negative passages than when they read positive ones. In free recall the reader must use his/her subjective organization of the text to retell the story. If the text is positive and in agreement with the reader's schema perhaps the reader is more likely to report higher level propositions in recall and therefore report fewer details. This situation could result in lower recall scores. If the text is negative or is in conflict with the reader's schema perhaps the reader is forced to "work" with the text

and therefore recall more of the text. This situation could result in higher recall scores. Future studies might examine differences in recall of higher level propositions.

For probe question scores the absolute value for the means for the positive and negative passages were very close, while the absolute value for the mean for the neutral passages was higher. It is difficult to explain this finding, but the parallelism between the positive and negative passages and the similarity of the probe questions for those two versions may provide a reasonable explanation.

Also, the fact that probed recall is less sensitive to subjective organization may support the finding of lower performance on affective passages than on neutral passages. Differences in questions and the nature of probed recall are two reasonable explanations of the findings from probe question scores. Further research which could seek to clarify these findings is recommended in a later section.

Research Question 2. Is there a relationship between fourth graders' responses to a semantic differential measuring feelings about passages having

positive, neutral, or negative emotional contexts and the amount of information recalled from the passages?

The results of the linear regression using comprehension scores from positive, neutral, and negative passages suggest that the students' responses to the semantic differential in this study are not related to free recall or probe question performance.

However, when the data from neutral passages were dropped from the regression analysis for free recall scores, the results were significant. This finding suggests that free recall performance on positive and negative passages might be related to students' responses to the semantic differential used in this study. Although students may have a problem differentiating between lower levels of affect, this finding indicates that stronger affect, either positive or negative, is related to students' performance on memory and comprehension tasks.

The lack of a strong overall relationship between the direction of students' responses to the semantic differential and their comprehension scores prompted the researcher to examine the effects of the magnitude of response on comprehension. The results of the correlations using comprehension scores and modified semantic differential scores were not significant.

Therefore, the magnitude of response to the semantic differential was not related to comprehension scores.

The results of the regression analyses suggest that students' classifications of the passages, as measured by responses to the semantic differential, do not have as strong a relationship to comprehension performance as the researcher's classification. Given the results of the analyses of variance, it appears that the researcher's classification of the passages as positive, neutral, and negative produced significant differences in student performance.

It is interesting to compare students' responses to questions about general disposition toward the passages with the researcher's classifications of the passages. At the end of each session with a student the researcher asked three questions: (a) Which story made you feel the happiest?, (b) Which story made you feel the saddest?, and (c) Which story was your favorite? The majority of students answered the first question with the name of the positive passage they had read. Students also tended to answer the second question with the name of the negative passage they had read. Responses to the third question varied: the greatest percentage of students answered with the name of the positive passage read; fewer students with

the name of the neutral passage, and a small percentage answered with the name of the negative passage. Overall, students' answers to these questions indicated agreement with the researcher's classification of the passages despite the fact that students' responses to the semantic differential did not indicate a strong differentiation between positive and neutral feelings.

The issue here concerns a general disposition toward a passage as opposed to a more fine-grained distinction of feelings. The semantic differential measures students' feelings in a detailed manner with five choices of responses to seven items. The questions asked by the researcher at the end of each session tapped a more general feeling about the passages. In this study a bottom-up variable was manipulated to determine a top-down effect. The responses to the semantic differential and to these informal questions suggest that indeed a top-down effect was found.

Research Question 3. Do students recall different relationships when they read passages with positive, neutral, or negative emotional contexts? The only conclusion which can be drawn from the results is that the differences in recall of the elements in these

relationships were probably not due to chance. There were over 70 relationships in the passages, and the fact that four out of the ten tested showed significant differences in recall is not interpreted as strong evidence of a qualitative effect of emotional orientation on reading comprehension. Future studies could be structured to examine the qualitative differences in recall.

Theoretical Implications

The results of this study have theoretical implications for two areas: a theory of comprehension and a theory of emotional development.

Comprehension. The present study was conducted in order to determine if the emotional context of a passage impacts a reader's comprehension in the same way that prior knowledge does. The effects of prior knowledge on reading comprehension have been found to be both quantitative and qualitative. The quantitative effect is that the reader remembers different amounts of information from passages read with different prior knowledge. The qualitative effect suggests that readers with different prior knowledge recall different information from the same text. In this study on the impact of emotional

orientation on reading comprehension, both effects were observed; however, the quantitative effect seemed more pronounced.

How do these findings relate to a theory of comprehension? The information processing model (Norman and Bobrow, 1975) discussed earlier accounts for a bidirectional effect on information processing, bottom-up or top-down. When the theory is applied to reading comprehension there are two sets of variables which can affect comprehension. Bottom-up variables in comprehension include text variables such as vocabulary levels, text structure, and complexity of ideas. Variables which operate in a top-down manner are those associated with the reader, such as general intelligence, reading ability, interest, attitude, and motivation, and prior knowledge. These variables have been found to impact comprehension (Asher, 1978; Bernstein, 1955; Kokovich & Matthews, 1971; Lovelace, 1983; Rowell, 1972; Mathews, 1982). Others in this cluster of person variables might include personality traits and individual learning styles.

In this study the variable manipulated was the emotional context of the passage, not the subject. That is, a bottom-up manipulation was used to demonstrate a top-down effect. Although the findings

were different for free recall scores than for probe question scores, manipulating the emotional context of the passages resulted in significant differences in recall. Also, students indicated that the positive passages made them feel happy and the negative ones made them feel sad. The top-down effect demonstrated in this study, although different measures yielded different outcomes, indicates that the emotional context of a passage should be grouped with the top-down variables which affect reading comprehension.

Does the emotional context of a passage impact a reader's comprehension in the same way prior knowledge does? The results of this study suggest that the effects of affect on comprehension appear to be mostly quantitative. However, the effects of prior knowledge are both quantitative and qualitative. From this study it appears that the emotional context of a passage impacts the amount of information recalled more so than what is recalled.

Emotion. The results of this study suggest that children can judge the direction of their affect but may not be as capable of judging the magnitude of their affect. Students' responses to the semantic differential after reading passages labeled neutral by the researcher tended to be more positive than

neutral. It was speculated that children tend to report a positive or negative feeling, but if the feeling is neutral, perhaps they tend to respond in a positive manner to please the teacher or examiner. At the end of each session the researcher asked the student three questions. Students' responses indicated that generally the passages labeled positive by the researcher made them feel happy and those labeled negative made them feel sad. The differences in students' responses to these two measures indicate that students were able to make a general assessment of their affect, but they had difficulty making more fine-grained distinctions. These results suggest a developmental nature of children's ability to differentiate between the direction and magnitude of affect, a possibility which deserves further investigation.

Given the students' responses to the neutral passages and the fact that the neutral passages performed inconsistently in this study, one might question the existence of neutral affect at any age. Do humans ever really experience no affect? This is a question for further research.

Recommendations for Practice

The impact of the emotional orientation of a passage on reading comprehension has implications for classroom practice as well as for materials development. The implications for classroom practice involve six issues. First, discussions prior to reading a story would include attention to the emotional context of the story. Since prior knowledge has a potent effect on reading comprehension educators have changed instruction to provide the necessary knowledge base before students are given a comprehension task. Emotional orientation of a passage has been found to impact the amount of information recalled from a passage. This is one of the effects of prior knowledge on comprehension. Therefore, improved comprehension might also be achieved by attending to the emotional tone of a passage and to a lesser extent, the emotional orientation of the student toward the topic. For example, in preparing students to read a story about snakes, the teacher would discuss not only facts about snakes but also the feelings of the students about snakes and, more importantly, the context in which the story occurs. In the early stages of this study it was found that topic alone does not always generate a

reaction from students. The context in which the topic is embedded is potentially a more important variable to be considered than mere topic interest.

Second, metacognition is a strategy useful to learners. Students' awareness of the learning process can enhance their performance. Therefore, it is necessary to make students aware of the possible effects of the emotional orientation of a passage on their reading comprehension.

However, some children may be too young to use metacognitive strategies to overcome the effects of emotion toward a passage or the emotional context of a passage. Allowing students choices in the selection of their own reading materials whenever possible could eliminate any ill-effects of emotion on reading comprehension.

Fourth, the effect of emotional orientation of a passage has implications for a second area of classroom practice. A common technique recommended to determine the appropriateness of material is the use of an interest inventory. The three topics used in this study generated a great deal of interest, but the context in which the topics were embedded produced differences in recall of the passages. Instead of using an interest inventory, teachers might also

attempt to assess the kinds of orientations a child has toward a topic and what kinds of orientations a child has toward that topic in a particular context.

Also, the results of this study have implications for classroom practices after reading assignments are given. In recalling negative passages some students in the study stated ideas from the story and then gave their opinion or an observation to support an opposite idea. They tended to state the negative version expressed in the story and then relate personal experiences which reframed the same information in a more positive context. The ability to perform a comparison-contrast analysis of information in a passage is a skill educators seek to develop in teaching students to read. Since the negative passages in this study seemed to contribute to students' use of this skill, having students read passages with negative emotional contexts might provide a means to develop and practice this skill. Also, using passages with positive emotional contexts could be used later to further develop students' analytical skills by requiring students to reverse the process.

In addition to recommendations for classroom practice, the results of this study have implications

for development of reading materials. Reading textbooks need to contain many selections which have an emotional orientation. The current trend to use primarily informational passages in textbooks does not consider the influence of the emotional orientation of a passage on the reading comprehension of that passage. The positive and negative versions of the passages in this study produced more consistent results than the neutral versions.

Recommendations for Further Research

The findings of this study suggest several areas in which further research might be conducted. First, additional investigations could gather evidence to confirm or deny the findings related to the qualitative effect of the emotional orientation of a passage on reading comprehension. Second, the stages of emotional development in young children and the nature of emotion in general require further study. Also, the semantic differential is an instrument which could be useful in research. Finally, the neutral passages in this study resulted in inconsistent findings; further research on the quantitative effect

of the emotional orientation of a passage should eliminate the aspect of neutral affect. Additional replications need to be done with both older and younger children to determine if the quantitative effect operates with different age levels.

REFERENCES

Anderson, R.C., Spiro, R.J., & Montague, W.E. (Eds.). (1977). Schooling and the acquisition of knowledge. Hillsdale, NJ: Erlbaum Associates.

Asher, S.R. (1978). Influence of topic interest on black children's and white children's reading comprehension (Report No. 99). Champaign, Illinois: Center for the Study of Reading.

Ausubel, D. (1968). Educational psychology: A cognitive view. New York: Holt, Rinehart, & Winston.

Bernstein, M.R. (1955). Relationship between interest and reading comprehension. Journal of Educational Research, 49, 283-288.

Bobrow, D.G., & Norman, D.A. (1975). Some principles of memory schemata. In D.G. Bobrow & A. Collins (Eds.), Representation and understanding: Studies in cognitive science (pp. 131-149). New York: Academic Press, Inc.

Bower, G. (1981). Mood and memory. American Psychologist, 36, 129-148.

Gibson, E.J., & Levin H. (1975). The psychology of reading. Cambridge: MIT Press.

Goodman, K.S. (1979). The know-more and know-nothing movements in reading: A personal response. Language Arts, 56, 657-663.

Just, M.A., & Carpenter, P.A., (Eds.). (1977). Cognitive processes in comprehension. Hillsdale, NJ: Erlbaum Associates.

Kintsch, W. (1974). The representation of meaning in memory. New York: Erlbaum Associates.

Kintsch, W. (1979, April). On comprehension. Paper presented at the meeting of the American Educational Research Association, San Francisco.

Kintsch, W., & van Dijk, T.A. (1978). Toward a model of text comprehension and production. Psychological Review, 85, 363-394.

Kokovich, A., & Matthews, G.E. (1971). Reading and the self-concept. National Elementary Principal, 50, 53-54.

Lazarus, R. S. (1984). On the primacy of cognition. American Psychologist, 39, 124-129.

Lovelace, T. (1983). Motivation and self-concept related to reading achievement. In R.J. DeSanti (Ed.) Teachers' needs and concerns regarding reading instruction: Findings, strategies, and applications (pp. 69-100). New York: University of America Press.

Mathews, S.R., II (1980). Age related effects of the interaction of prior knowledge and text structure on the recall of prose (Technical Report No. 569). Madison: Wisconsin Research and Development Center for Individualized Schooling.

Mathews, S.R., II., & Camperell, K. (1981). Comprehension research: Beyond single dependent measures. In G.H. McNinch (Ed.), Comprehension: Process and product The First Yearbook of the American Reading Forum (pp. 54-59). Sarasota, Florida.

Norman, D.A. (1981). Twelve issues for cognitive science. In D.A. Norman (Ed.), Perspectives on cognitive science (pp. 265-295). Norwood NJ: Ablex Publishing Co.

Norman, D., & Bobrow, D. (1975). On data-limited and resource-limited processes. Cognitive Psychology, 7, 44-64.

Rowell, C.G. (1972). An investigation of factors related to change in attitude toward reading. Journal of Reading Behavior, 5, 266-272.

Royer, J.M., & Cable, G.W. (1975). Facilitated learning in connected discourse. Journal of Educational Psychology, 67, 116-123.

Rumelhart, D.E. (1977b). Toward an interactive model of reading. In S. Dornic (Ed.), Attention and performance (pp. 573-603). Hillsdale, NJ: Erlbaum Associates.

Smith, F. (1971). Understanding reading. New York: Holt, Rinehart & Winston.

Zajonc, R.B. (1984). On the primacy of affect. American Psychologist, 39, 117-123.

Appendix A

Passages

Families - Positive Version

Everyone belongs to a family, but some families always have fun. In some families, everything seems to go well all the time. Sometimes parents get wonderful jobs and have plenty of money. This means that the children have exciting new toys and games and good-looking clothes to wear to school. The children like each other and get along well together. This makes the parents happy, and they feel great; then they like to play with the children. Since the parents have plenty of money, they take trips so the children can travel when they have time. Some families have fun times and are always enjoying life.

Families - Neutral Version

Everyone belongs to a family, but every family is different. In some families everyone has a special job to do each day. Sometimes parents buy food at the grocery store and cook dinner. This means the children set the table and wash the dishes. The children eat dinner and after awhile go to sleep. This makes the house very quiet, and the parents can talk to each other about the children; then the parents go to sleep. Since the parents have a good night's sleep they can cook breakfast so the children can eat before they go to school. Some families have many different projects and are always busy.

Families - Negative Version

Everyone belongs to a family, but some families have many problems. In some families, everything seems to go wrong all the time. Sometimes parents lose their jobs and don't have any money. This means that the children can't have new toys and games or any nice clothes to wear to school. The children do not like each other and fight a lot when they are together. This makes the parents angry, and they feel sad; then they yell loudly at the children. Since the parents have no money, they can't take trips so the children have to stay home all the time. Some families have no fun at all and are always in trouble.

Pets - Positive Version

Pets can be a lot of fun and can bring you much happiness. Pets are cute, and it is exciting to watch them grow into bigger animals and learn tricks. You can teach pets to sit up, roll over, and show off for your friends. Pets are brave and protect you and your family. Many pets have warm fur and like to sit in your lap; they will lick you and will purr when you pet them. They will play with you, jump in the air and follow you around. Even when you are lonely they will cheer you up. Some pets like to run with you to the store, and others like to be carried. If you need someone to talk to, then your pet will listen, because it loves you. When you need help, your pet will get you out of trouble or run for help.

Pets - Neutral Version

Pets can be found in pet shops, and you can buy them from friends. Pets can live inside or outside; they can live outside if you have a fence around the yard. Pets live with people and sometimes have their own houses. Pets can be little at first and grow to be large. Some have fur, but others have feathers; some pets walk or crawl, but others can fly around in their cages. They will eat, sleep, and move around the yard. When your pets are hungry you can feed them and give them water when they need it. Some pets clean themselves, and others have to have a bath. If you wash your pet, then it will smell pleasant because it is clean. When you go on a trip, you can leave your pet with friends or take it with you.

Pets - Negative Version

Pets can be real problems and need a great deal of attention. Pets are often dirty; it is hard to keep them clean and stop them from messing up the yard. Pets hiss, growl, and snap at you; they smell bad and bite you. Some pets do not like to be touched and scratch you when you pet them. Pets are sometimes dangerous because they chase people when they come to your house. They run away from you, tear furniture, and make noise at night. Even when you want to play, you have to worry about pets. Some pets get sick and have to be put to sleep. If you have a mean pet, then your friends will not come to play with you, because they will get bitten. When your pet makes too much trouble you have to put it to sleep or give it away.

Classrooms - Positive Version

Classrooms are places where students spend their time at school. In some classrooms the teacher is pleasant and smiles all the time. The teacher is helpful and makes learning fun by giving the students many interesting things to do. They go on field trips to neat places. Students see movies and filmstrips and enjoy talking about what they are studying. The students read plays and act out the story; they make puppets for these plays and afterwards can take their puppets home. When they finish their work, students can do fun projects such as drawing posters, building models, and making their own books. The teacher gives rewards if students behave well and do careful work. Everyone helps each other, and no one makes fun of anyone who makes a mistake. Some classrooms are fun places to be.

Classrooms - Neutral Version

Classrooms are places where students spend their time at school. In some classrooms the teacher is busy and sits at a desk. The teacher is there on time and collects lunch money by calling students to her desk one at a time. She writes different questions on the chalkboard. The students sit at their desks and answer these questions. The students practice handwriting and study the weekly spelling list; they work in workbooks and at the chalkboard. When they come in the room, they get ready to work by sharpening their pencils, getting out their paper, and finding their folders. The teacher gives the students books when it is time for reading. Students work alone on Mondays, and on Thursdays they work in groups. Classrooms are places where students work.

Classrooms - Negative Version

Classrooms are places where students spend their time at school. In some classrooms the teacher is mean and yells all the time. The teacher is not helpful and makes learning boring, because there is never anything interesting to do. They never go on any field trips to neat places. Students read books but don't know the answers to questions about what they read. They copy sentences out of a book and cannot make mistakes; the students have to do a large amount of homework and must turn it in the next day. When they do not turn in their homework, they have to miss play time, stand in the corner, or write sentences. The teacher gets very angry if someone does something wrong or is messy. Students cannot help each other, and they make fun of anyone who makes a mistake. Some classrooms are bad places to be.

Appendix B

Semantic Differential

Think about the story you read.

How does the story make you feel? How do you feel about the story?

For each number, CIRCLE ONE of the five words that best describes your feelings about the story.

1.	very happy	happy	OK	sad	very sad
2.	very bad	bad	OK	good	very good
3.	very worried	worried	OK	calm	very calm
4.	very scared	scared	OK	brave	very brave
5.	very proud	proud	OK	ashamed	very ashamed
6.	very excited	excited	OK	bored	very bored
7.	very ugly	ugly	OK	pretty	very pretty